

ABSTRACT

The present invention relates to a process for making polymerized hydrogel, in particular adhesives, which are characterized by very low amount of residual starting monomer(s), impurity(s) and/or by-products which could be formed during polymerization, such as acrylamide, acrylonitrile or acrolein.

After a first polymerization step, which is conducted from a reaction medium comprising starting monomer(s) and at least one polyol, the resulting hydrogel is then post-treated with a compound which chemically reacts with said residual monomer(s), impurity(s) and/or with said by-products the said polymerization could produce, to thereby reduce said residual starting monomer(s), impurity(s) and/or said by-products within said hydrogel.

The present invention also relates to polymerized hydrogels, in particular adhesives, comprising 10-90 wt% water, 10-60 wt% cross-linked hydrophilic polymer made from starting monomer(s) comprising acrylic acid, and 10-80 wt% of at least one polyol, such hydrogel being prepared by polymerizing said starting monomer(s) in the presence of said water and said polyol(s), wherein such hydrogels contain less than 500 ppb, preferably less than 100 ppb, more preferably less than 50 ppb and most preferably less than 20 ppb of α,β -unsaturated carbonyl by-product(s) derived from said polyol(s) during polymerization, and wherein the level of residual starting monomer(s) is below 200 ppm, preferably below 100 ppm, more preferably below 50 ppm, even more preferably below 20 ppm, and most preferably below 10 ppm.